

FORT FRANCES

water pollution control plant

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ONTARIO WATER RESOURCES COMMISSION

Division of Plant Operations

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ONTARIO WATER RESOURCES COMMISSION

801 BAY STREET, TORONTO 5
OFFICE OF THE GENERAL MANAGER

Members of the Fort Frances Local Advisory Committee,
Town of Fort Frances.

Gentlemen:

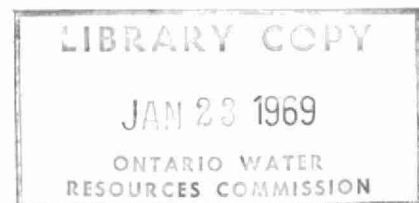
We are happy to present you with the 1967 Operating Summary for the Fort
Frances Water Pollution Control Plant, OWRC Project No. 2-0059-60.

Your co-operation with our staff throughout the year has been appreciated.
Only with such co-operation can the war against water pollution be waged
effectively.

Yours very truly,

A handwritten signature in dark ink, appearing to read "D. S. Caverly".

D. S. Caverly,
General Manager.



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ONTARIO WATER RESOURCES COMMISSION

801 BAY STREET
TORONTO 5

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VICE-CHAIRMAN

TELEPHONE 365-

D. S. CAVERLY
GENERAL MANAGER

W. S. MACDONNELL
COMMISSION SECRETARY

General Manager,
Ontario Water Resources Commission.

I am pleased to submit to you the 1967 Operating Summary for the Fort
Frances Water Pollution Control Plant, OWRC Project No. 2-0059-60.

The summary reviews progress during the year, outlines operating prob-
lems encountered and summarizes in graphs, charts and tables all sig-
nificant flow and cost data.

Yours very truly,

A handwritten signature in cursive script, reading "D. A. McTavish".

D. A. McTavish, P. Eng.,
Director,
Division of Plant Operations.

FOREWORD

● This operating summary has been prepared in order to acquaint readers with the management of the project during 1967. The efficiency of the plant's operation is reflected in a general review. Significant financial details are recorded, and technical performance is illustrated by graphs and charts.

The summary should answer two salient questions. Are the project's facilities adequate at this time? And can the project meet future requirements?

The Regional Operations Engineer is primarily responsible for the preparation of the report, and will be pleased to answer any questions regarding it.

Most of the material for the graphs and charts was compiled by the statistics section of the Division of Plant Operations, with the final versions of the graphs being drawn by the draughting section of the Division of Sanitary Engineering. Cost data were provided by the Division of Finance.

It will be evident from the report that all of these groups co-operated with substantial success.

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FORT FRANCES

water pollution control plant

operated for

THE TOWN OF FORT FRANCES

by

THE ONTARIO WATER RESOURCES COMMISSION

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Assistant Director: C. W. Perry
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'67 REVIEW

During the year, 691.262 million gallons were treated at a cost of \$35,624.59. The cost of \$51.54 per million gallons treated is an increase of 22 percent compared to 1966. The increased costs reflect the expense of repairing a faulty water service line at the plant and general increases in other categories.

Average removal efficiencies of 48.8 percent BOD and 35.5 percent for suspended solids were achieved for the year. The Fort Frances Water Pollution Control plant is staffed by a chief operator and two operators who provide supervision eight hours per day, 365 days a year. Regular inspections were carried out by the Operations Engineer during the year.

PROJECT COSTS

NET CAPITAL COST (Estimated)	\$1,894,004.13
DEDUCT - Portion Financed by CMHC (Estimated)	<u>1,249,113.99</u>
Long Term Debt to OWRC	\$ <u>644,829.44</u>
Debt Retirement Balance at Credit (Sinking Fund) December 31, 1967	\$ <u>52,155.19</u>
Debt Retirement	\$ 11,070.00
Reserve	11,148.23
Interest Charged	35,411.59
Net Operating	<u>35,624.59</u>
 TOTAL	 \$ <u>95,896.32</u>

RESERVE ACCOUNT

Balance at January 1, 1967	\$ 33,681.17
Deposited by Municipality	11,148.23
Interest Earned	<u>2,141.59</u>
	\$ 47,371.39
Less Expenditures	<u>(981.00)</u>
Balance at December 31, 1967	\$ <u>46,384.32</u>

MONTHLY OPERATING COSTS

MONTH	TOTAL EXPENDITURE	PAYROLL	FUEL	POWER	CHEMICAL	GENERAL SUPPLIES	EQUIPMENT	REPAIRS & MAINTENANCE	* SUNDRY	WATER
JAN	2,105.13	1,322.52		461.70		83.81	87.25	104.24	25.08	25.10
FEB	2,403.85	1,307.90	424.50	230.85		185.76	(37.88)	23.12	296.40	
MARCH	3,450.66	1,047.23	263.20	128.14		110.03		757.14	191.12	21.30
APRIL	2,911.75	1,215.23	268.20	743.61		134.32		31.10	335.02	50.1
MAY	2,240.24	1,408.75		193.43		214.80		53.50	314.17	
JUNE	2,313.17	1,374.27	442.50	255.53	338.72	75.59		240.12	27.34	25.70
JULY	2,111.51	1,363.65		507.84	337.71	31.15		81.06	354.45	50.00
AUG	2,492.01	1,269.20		202.10	395.72	208.71	25.25	150.09	133.85	
SEPT	3,080.49	2,040.27	322.40	405.32		217.59			190.00	25.00
OCT	3,778.16	1,568.10	164.93	52.11	101.65	214.52		407.15	195.38	25.25
NOV	2,431.22	1,369.40		238.27		147.34		570.14	1091.01	25.00
DEC	2,717.78	1,355.81	250.51	383.75		31.65	245.51	70.55	431.55	75.10
TOTAL	30,524.59	17,570.16	2571.34	4632.10	1070.31	1786.39	329.25	2400.40	3620.45	400.30

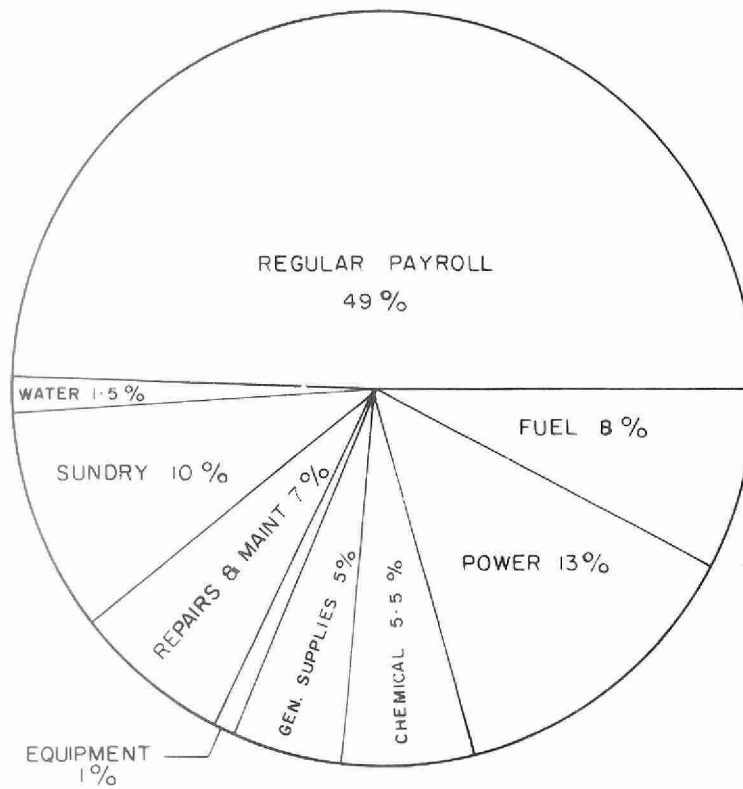
* SUNDRY INCLUDES SLUDGE HAULING COSTS WHICH WERE \$1,732.30

BRACKETS INDICATE CREDIT

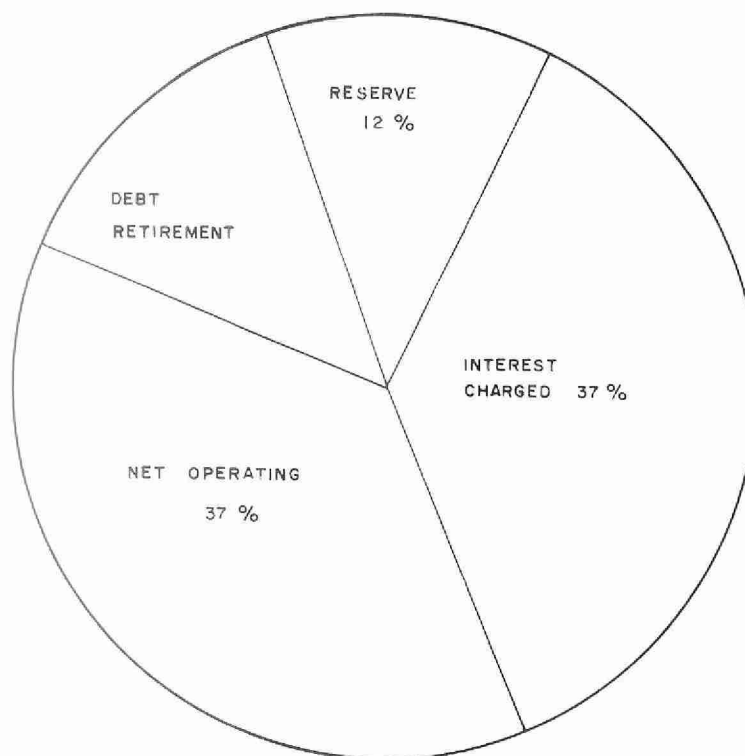
YEARLY OPERATING COSTS

YEAR	M. G. TREATED	TOTAL COST	COST PER MILLION GALLONS
1955	562,759	\$29310.65	\$52.05
1956	762,331	32057.25	42.15
1957	811,332	38114.59	51.54

1967 OPERATING COSTS



TOTAL ANNUAL COST

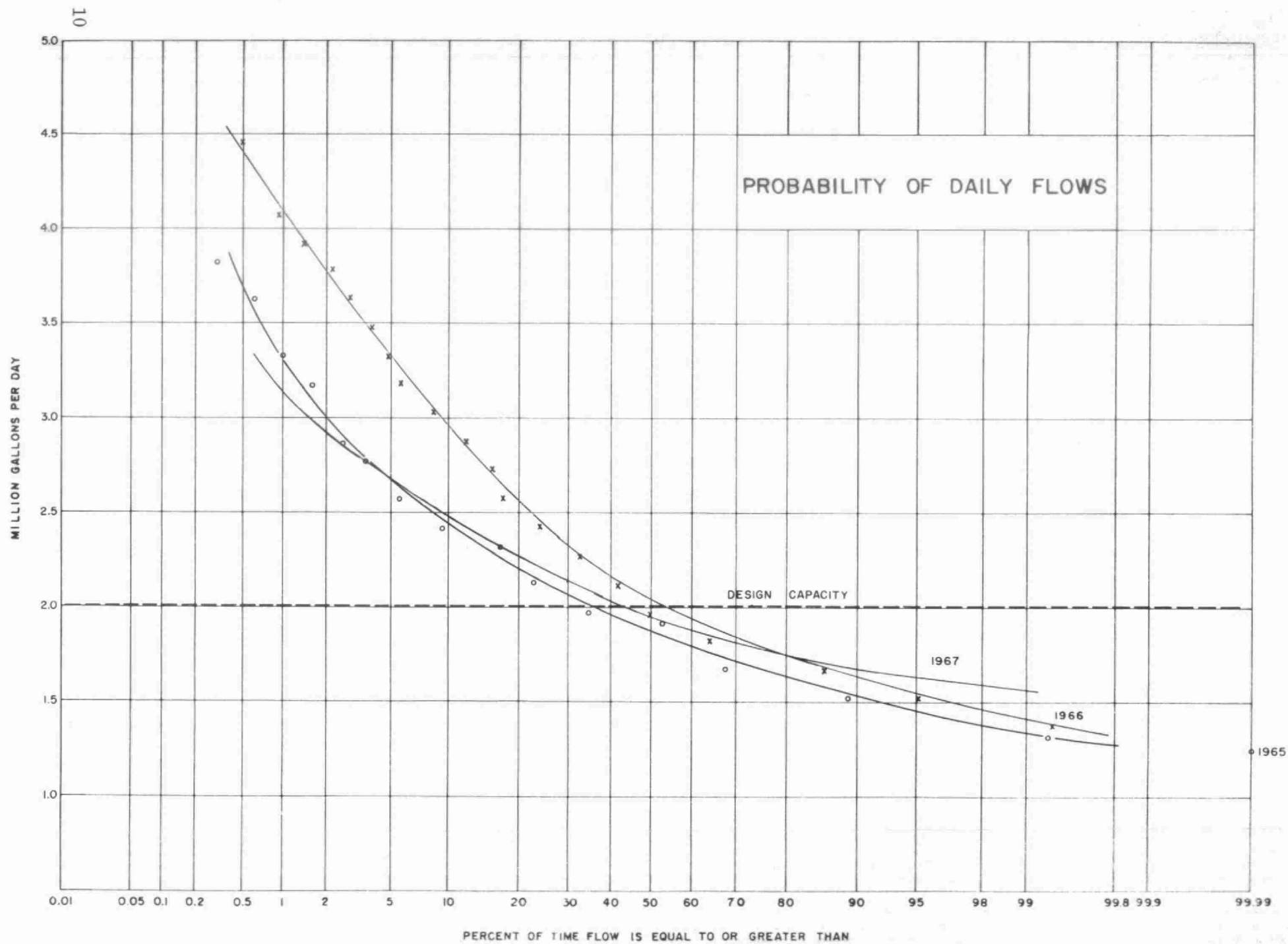


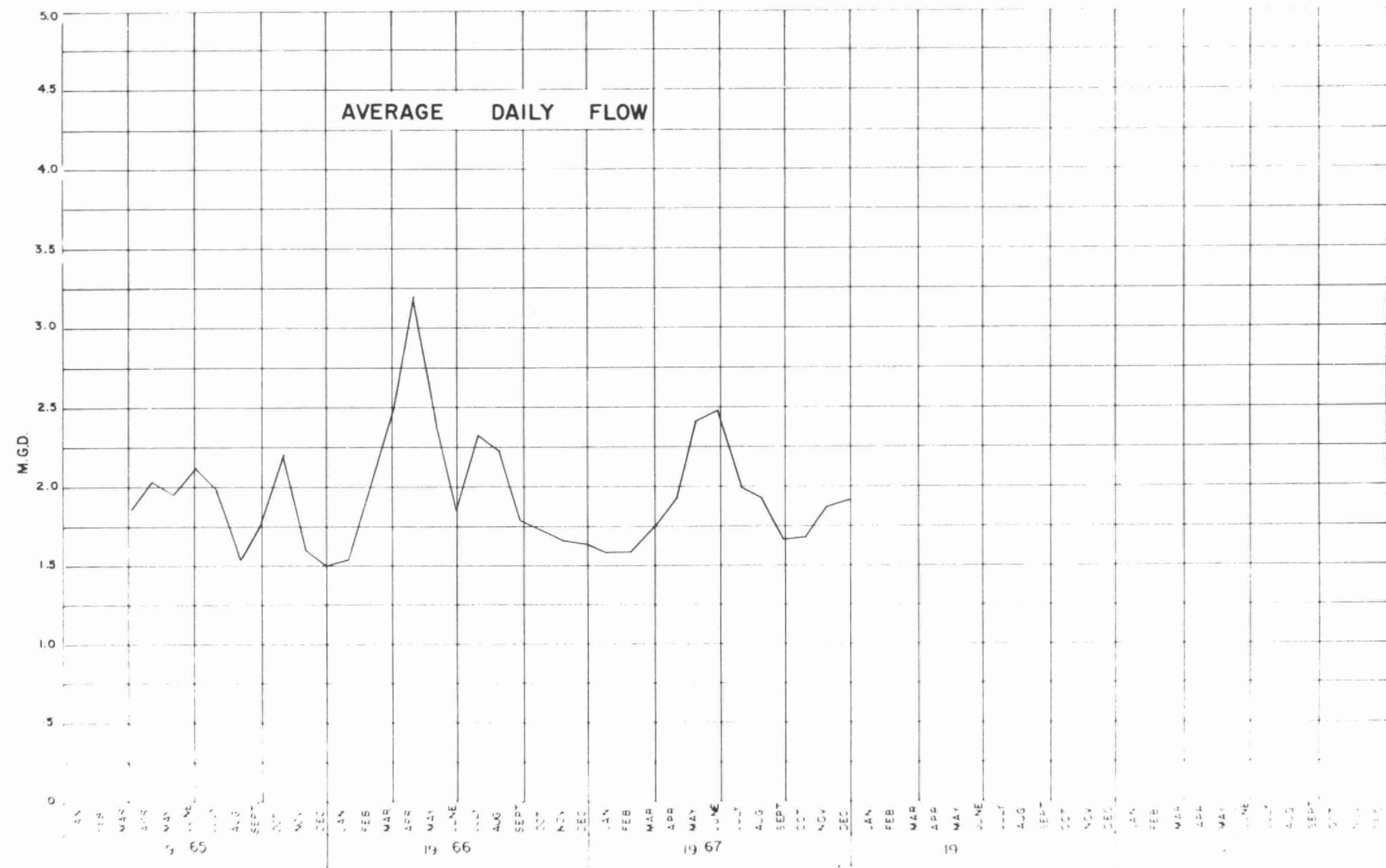
Process Data

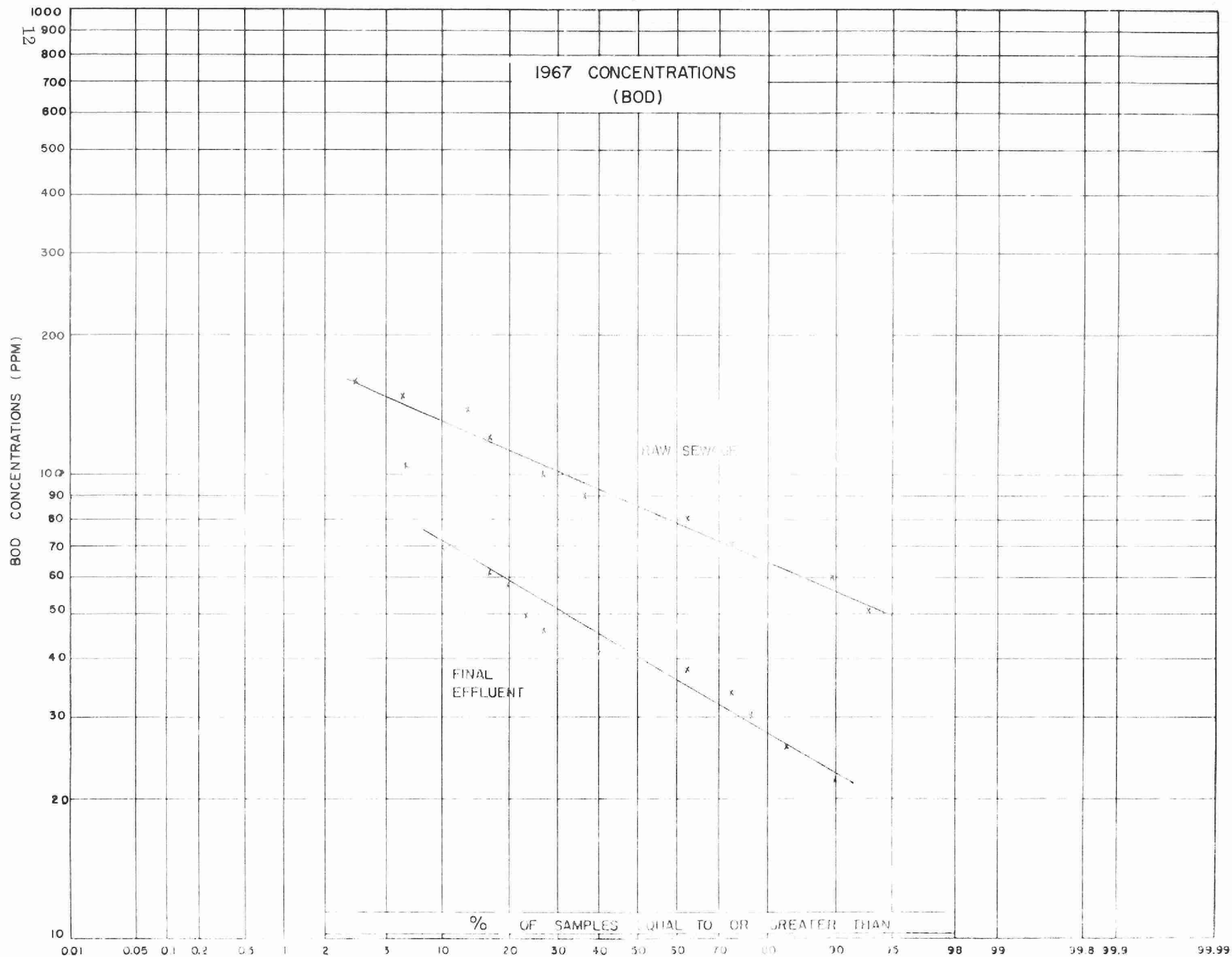
A total of 691,262 million gallons of sewage was given primary treatment during 1967. This is a decrease of 9.3 percent from the 1966 total flow. The average daily flow for the year was 1.9 million gallons.

The probability of flow plot shows that the design capacity of 2 mgd was exceeded 45 percent of the time.

The average daily flow graph indicates that the heaviest flows were received in the month of June, a noticeable reduction from the high April flows of 1966.

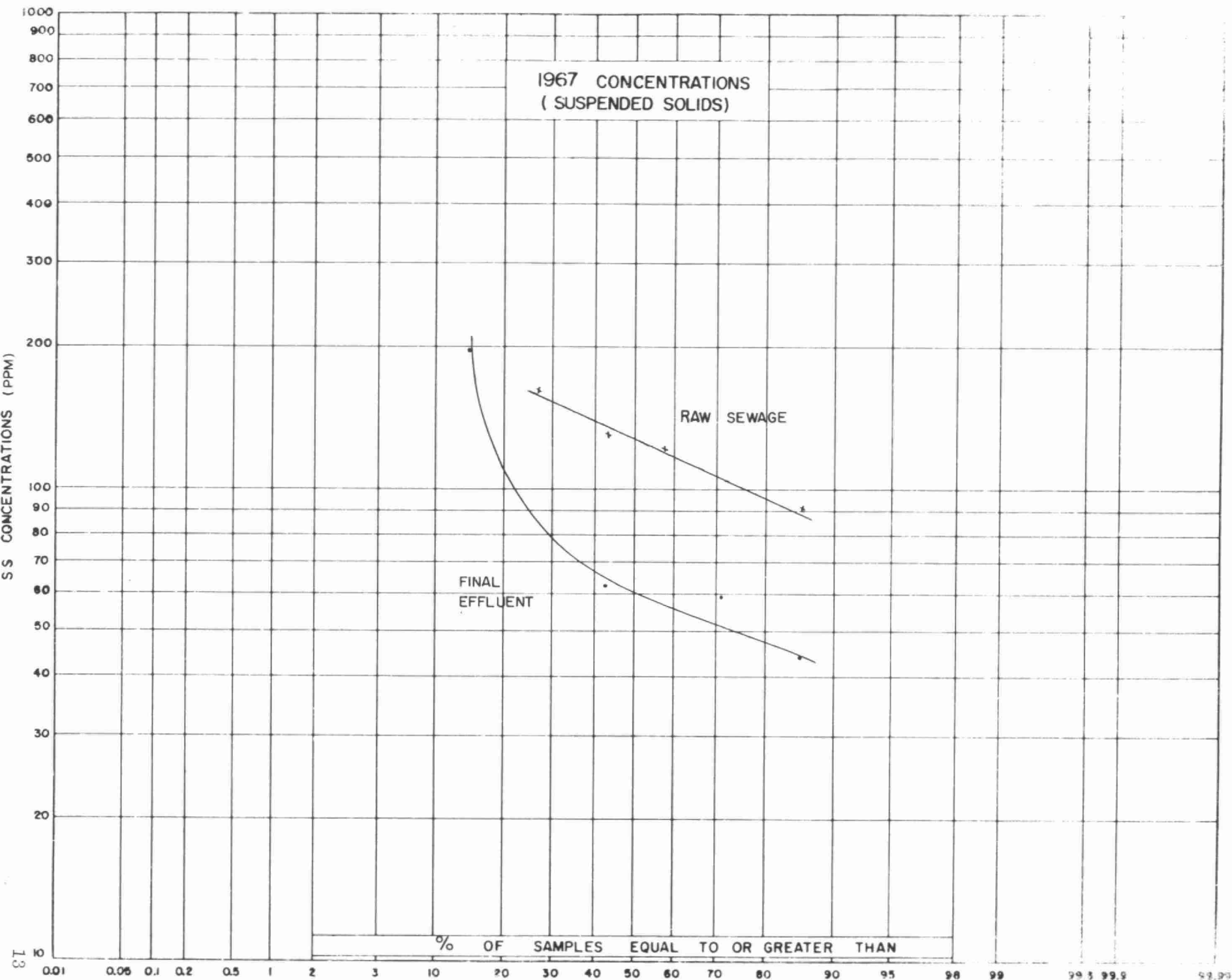


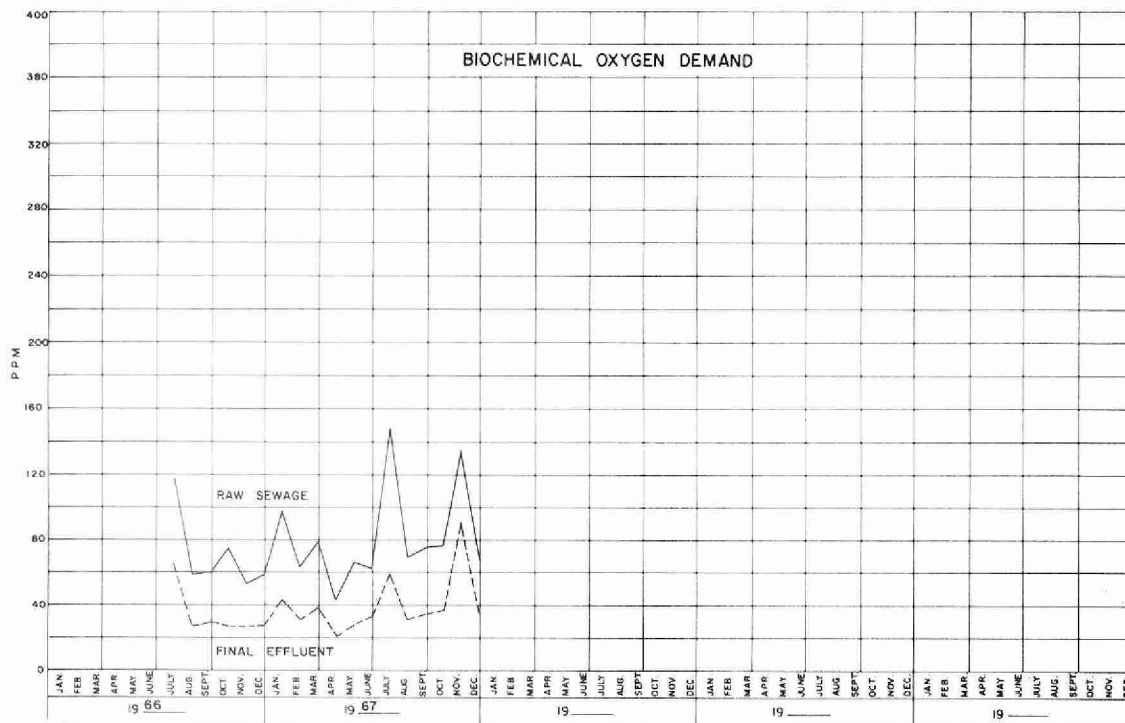




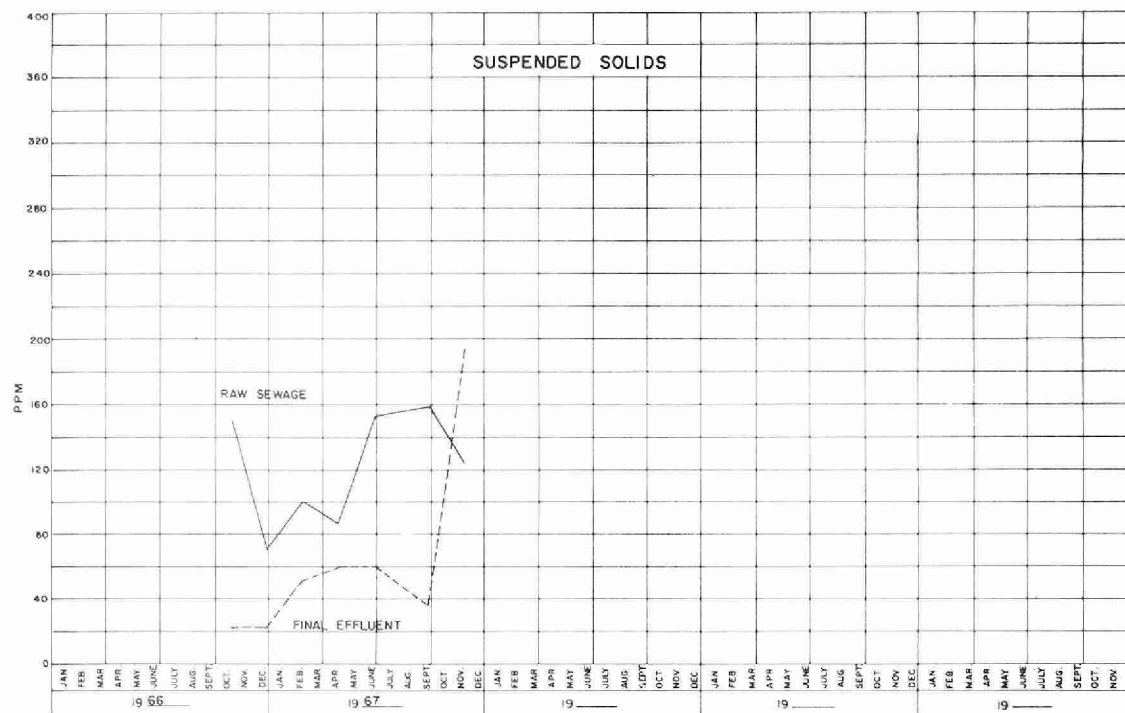
1967 CONCENTRATIONS (SUSPENDED SOLIDS)

SS CONCENTRATIONS (PPM)





MONTHLY VARIATIONS



GRIT, B.O.D AND S.S. REMOVAL

MONTH	B. O. D.				S. S.				GRIT REMOVAL CU. FT.
	INFLUENT PPM.	EFFLUENT PPM.	% REDUCTION	TONS REMOVED	INFLUENT PPM.	EFFLUENT PPM.	% REDUCTION	TONS REMOVED	
JAN.	98	45	54.1	12.96	-	-	-	-	-
FEB.	64	32	50.0	7.07	100	51	49.0	10.83	-
MAR.	80	40	50.0	10.68	-	-	-	-	-
APR.	44	22	50.0	6.26	86	59	31.4	7.68	
MAY	67	29	56.7	14.24	-	-	-	-	-
JUNE	63	34	46.0	10.80	152	60	60.5	34.25	50
JULY	150	61	56.4	24.44	-	-	-	-	90
AUG.	70	32	54.3	11.39	-	-	-	-	140
SEPT.	77	36	53.2	10.21	158	36	60.8	23.90	20
OCT.	78	38	51.3	10.35	-	-	-	-	40
NOV.	136	92	32.4	12.30	124	194	(36.1)	-	50
DEC.	69	37	46.4	9.47	-	-	-	-	25
TOTAL	-	-	-	140.15	-	-	-	152.08	415
AVG.	82	42	48.8	11.68	124	80	35.5	12.67	35

COMMENTS

An average raw sewage BOD of 82 ppm was reduced by 48.8% resulting in removal of 140.15 tons of BOD throughout the year. Suspended solids reduction averaged 35.5%. Percent removals are not high but are as expected with weak sewage.

A total of 415 cubic feet of grit was removed in 1967.

DIGESTER OPERATION

MONTH	SLUDGE TO DIGESTERS			SLUDGE FROM DIGESTERS			GAS PRODUCED 1000'S CU FT
	1000'S GALLONS	% SOLIDS	% VOL MAT	1000'S GALLONS	% SOLIDS	% VOL MAT	
JAN	52.700	-	-	6066	-	-	95.577
FEB	46.750	3.64	65.39	6066	-	-	92.908
MAR	56.200	-	-	8088	-	-	85.306
APR	66.000	-	-	9099	-	-	89.330
MAY	72.500	-	-	8088	-	-	114.842
JUNE	50.400	3.33	53.45	7077	6.37	58.55	77.502
JULY	34.600	-	-	7077	-	-	85.148
AUG.	44.400	-	-	8088	-	-	63.765
SEPT.	29.600	1.30	48.60	6066	-	-	98.714
OCT.	18.600	-	-	8088	-	-	95.367
NOV.	56.800	-	-	8088	-	-	121.764
DEC.	37.200	-	-	8088	-	-	97.656
TOTAL	565.750	-	-	89979	-	-	1117.879
AVG.	47.146	2.76	55.81	7498	6.37	58.55	93.157

COMMENTS

The total amount of sludge pumped to the digesters was 565,750 gallons. During the year, a total of 89,979 gallons was removed regularly by tank truck.

Digester gas production was 1,117,879 cubic feet, of which some was used for boiler operation.

CHLORINATION

MONTH	PLANT FLOW (MG)	POUNDS CHLORINE	DOSAGE RATE (PPM)
JANUARY	48.894	-	-
FEBRUARY	44.188	-	-
MARCH	53.405	-	-
APRIL	56.881	-	-
MAY	74.968	* 959	1.28
JUNE	74.469	1953	2.62
JULY	61.876	2263	3.66
AUGUST	59.933	2290	3.82
SEPTEMBER	49.800	1844	3.70
OCTOBER	51.751	1779	3.43
NOVEMBER	55.897	-	-
DECEMBER	59.201	-	-
TOTAL	691.262	11088	18.51
AVERAGE	57.605	1848	3.09

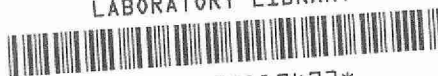
* 16 days chlorination.

COMMENTS

Disinfection of the final effluent from the Fort Frances plant is practiced during the summer months to protect public health.

A total of 11,088 pounds of chlorine was used at an average dosage of 3.09 ppm to produce a residual of 0.5 ppm.

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CONCLUSIONS

The plant was well maintained and operated and satisfactory treatment was provided throughout the year.

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